

WHAT IS CLAIMED IS:

1. A system for communicating information comprising:

a master UTOPIA device comprising:

5 a receive transfer controller operable to control reception of data by the master UTOPIA device; and

a transmit transfer controller operable to control transmission of data from the ATM switch;

10 a slave UTOPIA device comprising at least one memory area, the slave UTOPIA device comprising:

a receive poll controller operable to determine whether the memory area is available to transmit data for receipt by the master UTOPIA device and further operable to communicate the result of the determination to the receive transfer controller; and

15 a transmit poll controller operable to determine whether the memory area is available for receiving data to be transmitted by the master UTOPIA device and further operable to communicate the result of the determination to the transmit transfer controller.

20 2. The system of Claim 1, wherein the master UTOPIA device comprises an ATM card.

25 3. The system of Claim 1, wherein the slave UTOPIA device comprises a DSL line card.

30 4. The system of Claim 1, and further comprising a backplane directly connecting the ATM card to the DSL line card.

5. The system of Claim 1, wherein the receive poll controller and transmit poll controller are each operable to transmit a return clock signal to the ATM card for aligning data transferred to or received from the ATM card.

6. The system of Claim 1, wherein the receive poll controller and the transmit poll controller are devoid of any memory areas.

7. A UTOPIA slave device comprising:

a receive poll controller operable to determine whether a memory location on the UTOPIA slave device is available to transmit data for reception by a UTOPIA master device; and

5 a transmit poll controller operable to determine whether a memory location on the UTOPIA slave device is available to receive data to be transmitted by the ATM device.

10

8. The device of Claim 7, wherein the received poll controller includes a poll enable port, a serial cell available port, a start of serial cell available port, a cell available port, an address port, a clock port, and a return clock port.

15

9. The device of Claim 7, wherein the transmit poll controller includes a poll enable port, a serial cell available port, a start of serial cell available port, a cell available port, an address port, a clock port and a return clock port.

20 10. The device of Claim 7, wherein the UTOPIA slave device comprises a plurality of DSL modems.

25

11. The device of Claim 7, and further comprising a serial/parallel converter for converting data received by the device into parallel format and for converting data transmitted by the device to serial format.

30

12. The device of Claim 7, wherein the receive poll controller is operable to poll a plurality of DSL modems for determining whether each modem is available to transfer data.

5

13. The device of Claim 7, wherein the transmit poll controller is operable to poll a plurality of DSL modems to determine whether the DSL modem is ready to receive data.

14. A UTOPIA master device comprising:

a receive transfer controller operable to communicate with a receive poll controller located remote from the UTOPIA master device on a UTOPIA slave device and further operable to control reception of data by the UTOPIA master device from the UTOPIA slave device; and

10 a transmit transfer controller operable to communicate with a transmit poll controller located remote from the UTOPIA master device on the UTOPIA slave device and further operable to control transmission of data by the UTOPIA master device to the UTOPIA slave device.

15 15. The device of Claim 14, wherein the receive transfer controller comprises a start of cell port, a data port, a return clock port, a clock port, an address port, a poll enable port, a serial cell available port, and a start of cell available port.

20 16. The device of Claim 14, wherein the transmit transfer controller comprises a start of cell port, a data port, a return clock port, a clock port, an address port, a poll enable port, a serial cell available port, and a start of cell available port.

25 17. The device of Claim 14, wherein the receive transfer controller is operable to produce a poll enable signal specifying to the receive poll controller locator remote from the UTOPIA master device that polling of a plurality of transferring devices should begin.

18. The device of Claim 14, wherein the transmit transfer controller is operable to transmit a poll enable signal to the transmit poll controller, for a poll enable signal specifying that a plurality of devices should be 5 polled to determine which device is prepared to receive data.

19. The device of Claim 14, wherein the receive transfer controller and the transmit transfer controller are each operable to produce respective poll enable clock signals for transmission, respectively, to the receive poll controller and the transmit poll controller and further operable to receive, respectively, from the receive poll controller and the transmit poll controller a return clock signal for aligning data, respectively, received or transferred to the master device.

20. A method for communicating information between master and slave UTOPIA devices comprising:

5 providing a master UTOPIA device having a receive transfer controller operable to control reception of data by the master UTOPIA device and a transmit transfer controller operable to control transmission of or from the master UTOPIA device;

10 providing a slave UTOPIA device having a receive poll controller operable to determine whether the slave utopia device is available to transmit data and further operable to communicate the result of the determination to the receive transfer controller and a transmit poll controller operable to determine whether the slave UTOPIA device is available for receiving data and further operable to communicate the result of determination through the 15 transmit transfer controller;

connecting the master UTOPIA device to the slave UTOPIA device; and

20 transmitting information between the master UTOPIA device and the slave UTOPIA device, wherein said transmitting comprises:

25 determining, by the receive poll controller located on the slave UTOPIA device that the slave UTOPIA device is ready to transfer data to the master UTOPIA device, and in response initiating, by the receive transfer controller located on the master UTOPIA device, transfer of data from the slave UTOPIA device to the master UTOPIA device; and

30 determining, by the transfer poll controller located on the slave UTOPIA device, that the slave UTOPIA device is ready to receive data to be transmitted by the master UTOPIA device, and in

response initiating, by the transmit transfer controller located on the master UTOPIA device, transfer of data from the master UTOPIA device to the slave UTOPIA device.

5

21. The method of Claim 20, wherein determining, by the receive poll controller, that the slave UTOPIA device is ready to transfer data to the master UTOPIA device comprises receiving a poll enable signal at the receive

10

poll controller from the receive transfer controller.

15

22. The method of Claim 21, wherein determining, by the receive poll controller, that the slave UTOPIA device is ready to transfer data to the master UTOPIA device further comprises polling a plurality of modems on the UTOPIA slave device determine whether each modem is available to transfer data.

20

23. The method of Claim 20, and further comprising transmitting by the master UTOPIA device a poll enable signal to the slave UTOPIA device, the poll enable signal indicating that the slave UTOPIA device should poll a plurality of devices to determine whether they are ready to transfer data.

25

30

24. The method of Claim 20, and further comprising transmitting by the master UTOPIA device a poll enable signal to the slave UTOPIA device, the poll enable signal indicating that the slave UTOPIA device should poll a plurality of devices to determine whether they are ready to receive data.

25. The method of Claim 20, and further comprising receiving at the master UTOPIA device, a return clocks signal or aligning data to be received by the master UTOPIA device from the slave UTOPIA device.

5

26. The method of Claim 20, and further comprising transmitting a poll enable signal from the master UTOPIA device to the slave UTOPIA device, the poll enable signal indicating that the slave UTOPIA device should halt polling of associated devices.

10

27. A system for communicating data between a master UTOPIA device and a slave UTOPIA device comprising:

5 a transmit control means for controlling transmission of data from the master UTOPIA device to the slave UTOPIA device;

a receive control means for controlling reception of data at the master UTOPIA device from the slave UTOPIA device;

10 a transmit poll means for determining whether the slave UTOPIA device is ready to receive data transmitted by the master UTOPIA device and for communicating the result of said determination to the transmit control means;

15 a receive poll means for determining whether the slave UTOPIA device is ready to transmit data for reception by the master UTOPIA device and for communicating the result of said determination to the receive control means;

a cable means disposed between and connecting together the master UTOPIA device and a slave UTOPIA device; and

20 wherein the transmit control means and receive control means are separated from the transmit poll means and the receive poll means by the cable means.